

What is claimed is:

1. A combination of a recording device and an ink cartridge, comprising:

a recording device including:

5 an open portion with an opening that opens in a horizontal direction to outside;

 a floor surface that extends in the horizontal direction;

 a ceiling surface that extends in the horizontal
10 direction, an ink cartridge mounting portion being defined by the open portion, the floor surface, and the ceiling surface;

 a hollow needle that supplies ink to a recording head, the hollow needle being positioned in confrontation with the
15 open portion and extending in a needle axial direction;

 a cover selectively covering and uncovering the hollow needle with respect to the open portion;

 a lever that moves the cover to uncover the needle, the lever being positioned nearer the open portion than is the
20 cover;

 a protruding wall positioned on the floor surface adjacent to the lever, the protruding wall extending in the needle axial direction; and

 a sensor portion including a light emitting portion and
25 a light receiving portion in confrontation with each other,

the lever and the sensor portion protruding from the floor surface into the ink cartridge mounting portion at two positions that sandwich therebetween an imaginary extension of the axial needle extending in the needle axial direction;

5 and

an ink cartridge detachably mounted in the ink cartridge mounting portion, the ink cartridge including:

a lower surface adapted to abut against the floor surface and slide from the open portion to the hollow needle
10 of the recording device;

a front surface having an ink supply hole inserted with the hollow needle;

a protruding wall indentation portion that accommodates the protruding wall;

15 an operation portion provided at a position that is adjacent to the protruding wall indentation portion and that corresponds to the position of the lever and that is for operating the lever;

a sensor indentation portion that accommodates the
20 sensor portion; and

a light blocking member that moves corresponding to amount of ink remaining in the ink cartridge, the light blocking member provided in correspondence with the sensor portion so as to protrude into the sensor indentation
25 portion and interpose between the light emitting portion and

the light receiving portion when the ink cartridge is mounted in the ink cartridge mounting portion, the sensor indentation portion and the protruding wall indentation portion being formed open at the front surface and the lower surface at a position that sandwiches both sides on the ink supply hole as viewed from the front surface side.

2. A combination as claimed in claim 1, wherein the recording device includes a plurality of ink cartridge mounting portions aligned on the floor surface on substantially the same imaginary plane.

3. A combination as claimed in claim 2, wherein the ink cartridge mounting portions are positioned below a transport pathway for sheets recorded by the recording head.

4. A combination as claimed in claim 1, wherein:

the recording device further includes protrusion portions provided at horizontal ends of the ink cartridge mounting portion, the protrusion portions protruding away from the ceiling surface toward the floor surface; and

the ink cartridge further includes an upper surface that extends higher toward the ceiling surface at portions that correspond to in between the protrusion portions of the recording device than at portions that correspond to the protrusion portions, the protrusion portions regulating height-wise position of the ink cartridge when the ink

cartridge is inserted in the open portion, the protruding wall indentation portion and the operation portion being provided near the portions of the ink cartridge that correspond to the protrusion portions of the recording device.

5 5. A combination as claimed in claim 1, wherein the floor surface extends away from the hollow needle farther than the ceiling surface.

10 6. An ink cartridge for use with a recording device that includes an open portion with an opening that opens in a horizontal direction to outside; a floor surface that extends in the horizontal direction; a ceiling surface that extends in the horizontal direction; and ink cartridge mounting portion being defined by the open portion, the floor surface, and the ceiling surface; a hollow needle that supplies ink to a recording head, the hollow needle being positioned in confrontation with the open portion and extending in a needle axial direction; a cover selectively covering and uncovering the hollow needle with respect to
15 the open portion; a lever that moves the cover to uncover the needle, the lever being positioned nearer the open portion than is the cover; a protruding wall positioned on the floor surface adjacent to the lever, the protruding wall extending in the needle axial direction; and a sensor
20 portion including a light emitting portion and a light
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receiving portion in confrontation with each other, the lever and the sensor portion protruding from the floor surface into the ink cartridge mounting portion at two positions that sandwich therebetween an imaginary extension of the axial needle extending in the needle axial direction, the ink cartridge being detachably mounted in the ink cartridge mounting portion, the ink cartridge comprising:

a lower surface adapted to abut against the floor surface and slide from the open portion to the hollow needle of the recording device;

a front surface having an ink supply hole inserted with the hollow needle;

a protruding wall indentation portion that accommodates the protruding wall; and

a sensor indentation portion that accommodates the sensor portion, the sensor indentation portion and the protruding wall indentation portion being formed open at the front surface and the lower surface at a position that sandwiches both sides of the ink supply hole as viewed from the front surface side.

7. An ink cartridge as claimed in claim 6, wherein, when the recording device includes protrusion portions that protrude away from the ceiling surface toward the floor surface, the protrusion portions regulate height-wise position of the ink cartridge when the ink cartridge is

inserted in the open portion.

8. An ink cartridge for use with a recording device that includes an open portion with an opening that opens in a horizontal direction to outside; a floor surface that
5 extends in the horizontal direction; a ceiling surface that extends in the horizontal direction; an ink cartridge mounting portion being defined by the open portion, the floor surface, and the ceiling surface; right and left side surfaces extending from the floor surface to the ceiling
10 surface; a hollow needle that supplies ink to a recording head, the hollow needle being positioned in confrontation with the open portion and extending in an needle axial direction; a cover selectively covering and uncovering the hollow needle with respect to the open portion; a protruding
15 wall positioned on the floor surface, the protruding wall extending in the needle axial direction; and a sensor portion including a light emitting portion and a light receiving portion in confrontation with each other, the sensor portion protruding from the floor surface into the
20 ink cartridge mounting portion at a position shifted from the needle axial direction in a direction parallel with the lower surface, the sensor portion protruding from the floor surface into the ink cartridge mounting portion at two
25 positions that sandwich therebetween an imaginary extension of the axial needle extending in the needle axial direction,

the ink cartridge being detachably mounted in the ink cartridge mounting portion, the ink cartridge comprising:

5 a lower surface adapted to abut against the floor surface and slide from the open portion to the hollow needle of the recording device;

a front surface having an ink supply hole connected with the hollow needle;

10 a sensor indentation portion open to the front surface and the lower surface for accommodating the sensor portion, the sensor indentation portion being shifted, with respect to a view from the front surface side, from the ink supply hole in a direction parallel with the lower surface; and

15 a light blocking member that moves corresponding to amount of ink remaining in the ink cartridge, the light blocking member being provided in correspondence with the sensor portion so as to protrude into the sensor indentation portion and interpose between the light emitting portion and the light receiving portion when the ink cartridge is mounted in the ink cartridge mounting portion.

20 9. An ink cartridge as claimed in claim 8, wherein, when the recording device includes a plurality of ink cartridge mounting portions with a distance between left and right side surfaces of one ink cartridge mounting portion that is different from a distance between left to right side surfaces of another ink cartridge mounting portion, a

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distance between one of the left and right side surfaces of the ink cartridge mounted in the one ink cartridge mounting portion and the sensor indentation portion is different from a distance between the other one of the left and right surfaces of an ink cartridge mounted in the other ink cartridge mounting portion and the sensor indentation portion.

10. An ink cartridge as claimed in claim 9, wherein, when the recording device includes protrusion portions that protrude away from the ceiling surface toward the floor surface, the ink cartridge has a height determined by a distance between the protrusion portions and the floor surface of the recording device when the ink cartridge is inserted in the open portion.

11. An ink cartridge as claimed in claim 9, wherein a fixing wall is provided in the sensor indentation portion, the fixing wall includes an internal groove that extends parallel with direction of insertion into the open portion so that the fixing portion is inserted between the light emitting portion and the light receiving portion, the groove accommodating the light blocking member in a movable condition.